

In the Claims

Please amend the claims as follows:

1 1. (Currently Amended) A method of prioritizing data transfer
2 requests serviced by a centralized data transfer unit comprising
3 the steps of:

4 receiving transfer request packets, each transfer request
5 packet indicating a desired data transfer and a priority level
6 within a hierarchy of a plurality of priority levels;

7 storing each received transfer request packet in a queue
8 memory, each received transfer request packet stored in a first-in-
9 first-out fashion within each priority level, said storing
10 including

11 storing each received transfer request packet in a random
12 access memory fashion,

13 defining an address range within said queue memory
14 allocated to each priority level with a corresponding queue
15 bounds register,

16 storing a next input transfer request packet for a
17 priority level at address within said queue memory indicated
18 by a corresponding queue write pointer indicating address
19 location,

20 reading a next output transfer request packet for a
21 priority level from an address within said queue memory
22 indicated by a corresponding queue read pointer,

23 dynamically defining said address range allocated to a
24 priority level by dynamically writing to a corresponding queue
25 bounds register;

26 detecting availability of free data transfer channel among a
27 plurality of data transfer channels within said centralized data
28 transfer processor; and

29 dispatching a next transfer request packet in said first-in-
30 first-out fashion to the corresponding free data transfer channel.

2. (Canceled)

1 3. (Currently Amended) The method of claim 2 1, further
2 comprising the steps of:

3 incrementing the corresponding queue write pointer upon
4 storage of a transfer request packet in queue memory; ~~memory~~ and
5 decrementing the corresponding queue read pointer upon
6 transfer of a transfer request packet to a data transfer channel.

4. (Canceled)

1 5. (Currently Amended) The A method of ~~claim 1~~, further
2 prioritizing data transfer requests serviced by a centralized data
3 transfer unit comprising the steps of:

4 receiving transfer request packets, each transfer request
5 packet indicating a desired data transfer and a priority level
6 within a hierarchy of a plurality of priority levels;

7 storing each received transfer request packet in a queue
8 memory, each received transfer request packet stored in a first-in-
9 first-out fashion within each priority level;

10 detecting availability of free data transfer channel among a
11 plurality of data transfer channels within said centralized data
12 transfer processor;

13 dispatching a next transfer request packet in said first-in-
14 first-out fashion to the corresponding free data transfer channel;

15 detecting if a channel corresponding to a priority level
16 within the queue is empty; and

17 if a received transfer request packet ~~of~~ has a priority level
18 detected to be empty;

19 bypassing storing said transfer request packet in said
20 queue memory, and
21 dispatching said transfer request packet directly to the
22 corresponding free data transfer channel.

1 6. (Original) The method of claim 1, further comprising the
2 steps of:

3 generating said transfer request packets at each of a
4 plurality of transfer request nodes; and

5 upon dispatching of a transfer request packet to a free data
6 transfer channel, sending a queue acknowledge signal to said
7 transfer request node originating said transfer request packet.

1 7. (Currently Amended) The A method of ~~claim 1~~, further
2 prioritizing data transfer requests serviced by a centralized data
3 transfer unit comprising the steps of:

4 receiving transfer request packets, each transfer request
5 packet indicating a desired data transfer and a priority level
6 within a hierarchy of a plurality of priority levels;

7 storing each received transfer request packet in a queue
8 memory, each received transfer request packet stored in a first-in-
9 first-out fashion within each priority level;

10 detecting availability of free data transfer channel among a
11 plurality of data transfer channels within said centralized data
12 transfer processor;

13 dispatching a next transfer request packet in said first-in-
14 first-out fashion to the corresponding free data transfer channel;

15 generating said transfer request packets at each of a
16 plurality of transfer request nodes, said transfer request packet
17 identifying ~~said~~ an originating transfer request node;

18 disabling dispatching transfer request packets originating
19 from selected transfer request nodes; and

20 ignoring transfer request packets originating from disabled
21 transfer request nodes.

1 8. (Currently Amended) The method of claim 8 7, wherein:
2 said step of disabling dispatching transfer request packets
3 originating from selected transfer request nodes includes writing
4 at least one to a corresponding location within a request disable
5 register.

1 9. (Currently Amended) The method of claim 9 1, wherein:
2 the number of data transfer channels equals the number of
3 priority levels.

1 10. (New) The method of claim 5, wherein:
2 said step of storing each received transfer request packet in
3 a queue memory includes
4 storing each received transfer request packet in a random
5 access memory fashion,
6 defining an address range within said queue memory
7 allocated to each priority level with a corresponding queue
8 bounds register,
9 storing a next input transfer request packet for a
10 priority level at address within said queue memory indicated
11 by a corresponding queue write pointer indicating address
12 location, and
13 reading a next output transfer request packet for a
14 priority level from an address within said queue memory
15 indicated by a corresponding queue read pointer.

1 11. (New) The method of claim 10, further comprising the
2 steps of:

3 incrementing the corresponding queue write pointer upon
4 storage of a transfer request packet in queue memory; memory and
5 decrementing the corresponding queue read pointer upon
6 transfer of a transfer request packet to a data transfer channel.

1 12. (New) The method of claim 5, further comprising the steps
2 of:

3 generating said transfer request packets at each of a
4 plurality of transfer request nodes; and

5 upon dispatching of a transfer request packet to a free data
6 transfer channel, sending a queue acknowledge signal to said
7 transfer request node originating said transfer request packet.

1 13. (New) The method of claim 5, wherein:

2 the number of data transfer channels equals the number of
3 priority levels.

1 14. (New) The method of claim 7, wherein:

2 said step of storing each received transfer request packet in
3 a queue memory includes

4 storing each received transfer request packet in a random
5 access memory fashion,

6 defining an address range within said queue memory
7 allocated to each priority level with a corresponding queue
8 bounds register,

9 storing a next input transfer request packet for a
10 priority level at address within said queue memory indicated
11 by a corresponding queue write pointer indicating address
12 location, and

13 reading a next output transfer request packet for a
14 priority level from an address within said queue memory
15 indicated by a corresponding queue read pointer.

1 15. (New) The method of claim 14, further comprising the
2 steps of:

3 incrementing the corresponding queue write pointer upon
4 storage of a transfer request packet in queue memory; memory and
5 decrementing the corresponding queue read pointer upon
6 transfer of a transfer request packet to a data transfer channel.

1 16. (New) The method of claim 7, further comprising the steps
2 of:

3 generating said transfer request packets at each of a
4 plurality of transfer request nodes; and

5 upon dispatching of a transfer request packet to a free data
6 transfer channel, sending a queue acknowledge signal to said
7 transfer request node originating said transfer request packet.

1 17. (New) The method of claim 7, wherein:

2 the number of data transfer channels equals the number of
3 priority levels.

1 18. (New) The method of prioritizing data transfer requests
2 serviced by a centralized data transfer unit comprising the steps
3 of:

4 receiving transfer request packets, each transfer request
5 packet indicating a desired data transfer and a priority level
6 within a hierarchy of a plurality of priority levels;

7 storing each received transfer request packet in a queue
8 memory, each received transfer request packet stored in a first-in-
9 first-out fashion within each priority level;

10 detecting availability of free data transfer channel among a
11 plurality of data transfer channels within said centralized data
12 transfer processor;
13 dispatching a next transfer request packet in said first-in-
14 first-out fashion to the corresponding free data transfer channel;
15 generating said transfer request packets at each of a
16 plurality of transfer request nodes; and
17 upon dispatching of a transfer request packet to a free data
18 transfer channel, sending a queue acknowledge signal to said
19 transfer request node originating said transfer request packet.

1 19. (New) The method of claim 18, wherein:
2 said step of storing each received transfer request packet in
3 a queue memory includes
4 storing each received transfer request packet in a random
5 access memory fashion,
6 defining an address range within said queue memory
7 allocated to each priority level with a corresponding queue
8 bounds register,
9 storing a next input transfer request packet for a
10 priority level at address within said queue memory indicated
11 by a corresponding queue write pointer indicating address
12 location, and
13 reading a next output transfer request packet for a
14 priority level from an address within said queue memory
15 indicated by a corresponding queue read pointer.

1 20. (New) The method of claim 19, further comprising the
2 steps of:
3 incrementing the corresponding queue write pointer upon
4 storage of a transfer request packet in queue memory; memory and

5 decrementing the corresponding queue read pointer upon
6 transfer of a transfer request packet to a data transfer channel.

1 21. (New) The method of claim 18, wherein:
2 the number of data transfer channels equals the number of
3 priority levels.